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Abraham Lincoln's Health

Genetic Testing

Excerpts from newspapers and other
sources

From the files of the
Lincoln Financial Foundation Collection

Scientists Seek Lincoln DNA To Clone for a Medical Study

By WARREN E. LEARY

Special to The New York Times

WASHINGTON, Feb. 9 — A Government museum is considering an effort to clone tissue samples from Abraham Lincoln in an attempt to answer persistent questions about his health and how it might have affected his performance as President.

The work could set a precedent for examining the genetic material of other historical figures whose tissue has been preserved.

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Jose R. Lopez/The New York Times

Strands of Lincoln's hair.

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Continued on Page 16 Column 1

Scientists Seek DNA From Lincoln

Continued From Page 1

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The museum's collection of Lincoln's tissue, obtained at his autopsy, includes blood stains from the shirt cuffs of a doctor, 2 locks of hair totaling about 180 strands less than two inches long, and 7 bone fragments weighing a total of more than 10 grams from the head wound where the President was shot.

Patients Grow Tall and Gangly

Genetic material could disclose whether Lincoln was afflicted with an inherited disease called Marfan syndrome, as some experts suspect from indirect evidence, which could have taken his life at any time even if John Wilkes Booth had failed to assassinate the President at Ford's Theater on April 14, 1865.

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Was the slain President doomed by a disease?

drome would normally have been dead under 19th century medical care, today's experts say.

People with Marfan syndrome often grow tall and gangly with unusually long limbs and fingers. The National Marfan Foundation estimates that 40,000 Americans are afflicted. The ailment can cause abnormalities and weakness in bones and joints, eyes, the heart and blood vessels. Those afflicted are at risk of sudden death from exertion, which can cause the aorta, the main artery from the heart, to burst. Others die from other complications.

Some scientists suggest that genetic evidence also might one day show whether Lincoln suffered from chronic depression, as several biographers suspect, or from other conditions that affected his decision making.

"The prospect of examining Lincoln's DNA is exciting," said Dr. Mark F. Neely Jr., director of the Lincoln Museum in Fort Wayne, Ind. "For more than 20 years scholars have debated the Marfan's issue and I would be relieved to have this question put to rest. Lincoln spoke very little about his health but he was a remarkable physical specimen of frontier strength. Marfan's may have been quietly killing him, but it didn't affect him."

Dr. Victor A. McKusick, professor of medical genetics at Johns Hopkins University and an expert on Marfan syndrome who agreed to be chairman of the eight-member panel, said DNA from a dead person is potentially very revealing. DNA, deoxyribonucleic acid, is the basic building block of heredity. The estimated 100,000 genes in the nucleus of each human cell are made of DNA and the genes define the essence of the person.

DNA Holds Much Information

"Looking at a person's genetic setup could tell you if they were at increased risk of cancer or some other disease even when you couldn't establish that these things actually happened to them," Dr. McKusick said. "For certain genetically dominant disorders, like Marfan's, it would be more certain that this person was afflicted. In either case, this information might be useful if considered with other historical information."

Dr. McKusick and others emphasized that one thing that would not result from studying Lincoln's DNA would be a science-fiction-like attempt to reproduce the man. "There is no way one could take Lincoln's DNA and clone a new Lincoln, which is perhaps unfortunate," Dr. McKusick said.

The proposal to look for Lincoln's DNA came from Dr. Darwin J. Prockop, chairman of biochemistry and molecular biology at Jefferson Medical College in Philadelphia and a specialist in connective tissue research.

Dr. Prockop said researchers at several institutions have identified the approximate location of the gene that causes Marfan syndrome. Work is so advanced, he said, that the gene should be isolated and its disease-causing defect identified within two years.

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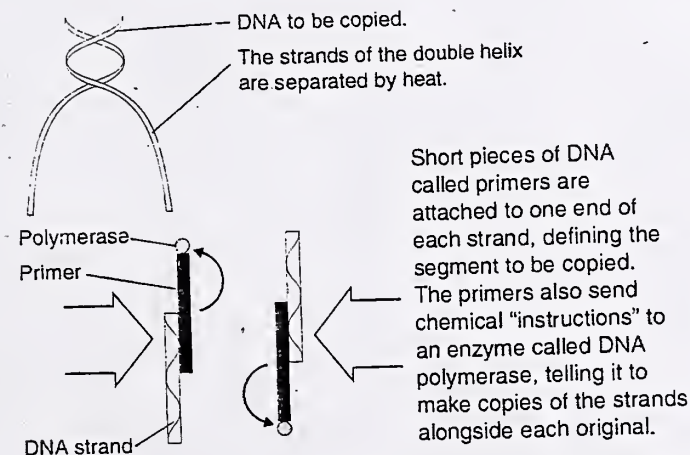
Tests on Microscopic Sample

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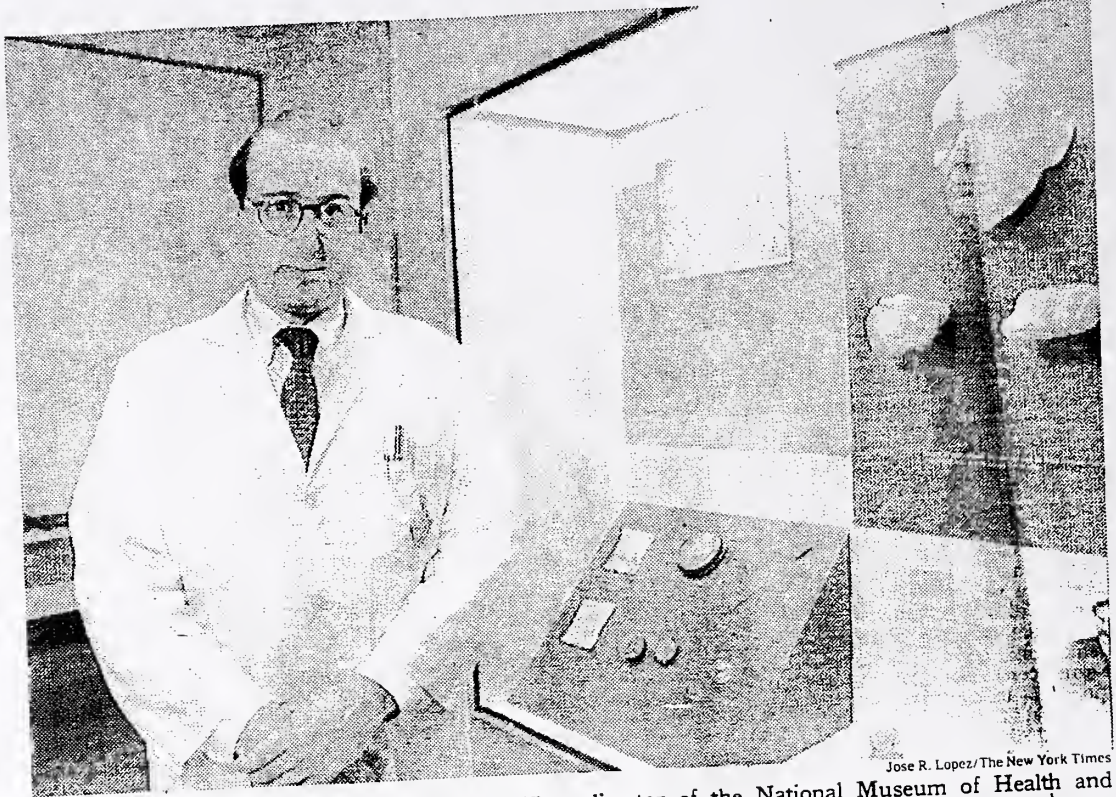
Cloning Lincoln's Genes

Scientists want to try to recover any genetic material remaining in samples of Abraham Lincoln's bones, blood and hair, and use a new cloning technique to produce adequate quantities for research.



The process can be repeated many times, doubling and redoubling the initial sample of DNA.

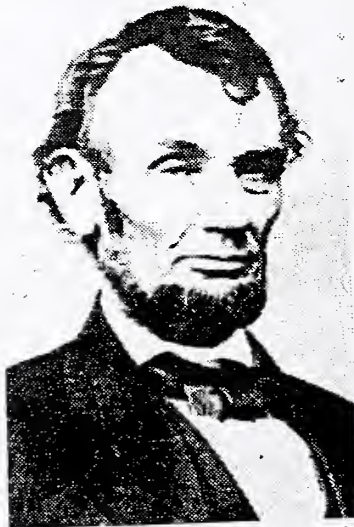




Jose R. Lopez/The New York Times

"We think there are ethical, political and scientific questions that should be considered before making available material we are charged with preserving to be destructively tested," said Dr. Marc S. Micozzi,

director of the National Museum of Health and Medicine in Washington. He stood near a cabinet containing strands of Lincoln's hair, his bone chips and impressions of his face and hands.



Abraham Lincoln, in an 1864 photograph by Matthew Brady.

Washington museum, said the institution's officials decided that they needed the advice of the expert panel on scientific, ethical, legal and other questions before making a decision. The institution, which is on the grounds of the Walter Reed Army Medical Center, was formerly named the Medical

Museum of the Armed Forces Institute of Pathology. In its collections are 17,000 specimens, including tissue samples from several Presidents and military leaders.

"While I think there is historical and educational value in learning about Lincoln's health," Dr. Micozzi said, "we think there are ethical, political and scientific questions that should be considered before making available material we are charged with preserving to be destructively tested."

While the advisory panel will specifically study the Lincoln proposal, its work will pertain to similar studies of other historical figures. It will examine questions like how to minimize the amount of material used, whether less destructive techniques might be available soon, whether descendants should approve and even how the historical figure would have approved the use of his tissue.

Lincoln is not known to have any direct descendants, experts said.

The American Medical Association agreed to sponsor both the work of the advisory group, which is to complete its report by the end of the year, and the research itself if the museum decides to go ahead, Dr. Micozzi said.

In addition to Dr. McKusick, other members of the panel are Dr. Lawrence Mohr, one of the four White House physicians; Cullum Davis of the Lincoln Legal Papers Project of the Illinois Historic Preservation Agency; Edward Alexander, former president

Seeking clues to the man behind the greatness.

of the American Association of Museums; Cheryl Williams, president of the National Marfan Foundation; Dr. Tim O'Leary of the Armed Forces Institute of Pathology; Lynne Poirier-Wilson, vice president for collections of the Strong Museum in Rochester, N.Y.; and Dr. Philip Reilly, a physician and lawyer who is executive director of the Eunice Kennedy Shriver Center in Waltham, Mass.

Jury Rejects Stress Defense

JACKSONVILLE, Fla., Feb. 9 (AP) — A sailor was convicted of a double murder Friday despite the defense's contention that he had been driven insane by the May 1987 Iraqi attack that killed 37 of his shipmates on the U.S.S. Stark. The defendant, Walter Thomas Taylor, 24 years old, was a lookout when an Iraqi plane fired two missiles into the ship. The defense said he was suffering from post-traumatic stress syndrome when he fatally beat an acquaintance, 21-year-old Paula Smits, and her 3-year-old daughter, Amanda, with a hammer in August 1987. Prosecutors said the murders were coverup of his rape of Ms. Smits.

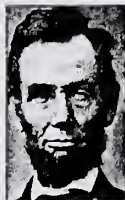
Tissue cloning may give glimpse of Lincoln's life, death

By WARREN E. LEARY
New York Times

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Lincoln

From Page 1A.

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AMERICAN HISTORY

Experts may test Lincoln's bones

By The Associated Press

WASHINGTON — Scientists want to test bone fragments, strands of hair and blood stains from Abraham Lincoln to determine if the 16th president had an inherited condition called Marfan's Syndrome.

Dr. Marc S. Micozzi, director of the National Museum of Health and Medicine, said Saturday that new techniques may make it possible to use 126-year-old specimens in his museum to reconstruct Lincoln's complete genetic pattern.

Such studies, he said, could tell much about Abe's aches, pains and health problems.

"There is a lot of potential social value to learning the answers to these questions," Micozzi said.

While settling the historians' debate about whether Lincoln had Marfan's, he said, the studies could also "provide an inspiring perspective" on what people can accomplish de-

spite serious medical problems.

Marfan's is an inherited condition that can have painful and crippling effects. Its most common symptoms include exceptional height and thinness, along with elongated fingers, arms, toes and legs and the effects of the condition can range from mild to very serious heart problems.

Patients severely affected die at the average age of 32.

Lincoln, assassinated at age 56, had many of the characteristics of Marfan's, but medical data on him isn't detailed enough to determine if he really inherited the disorder.

"He was tall and gaunt and narrow in the chest," Micozzi said. "From some descriptions, it looks like his legs and arms may have been within the range that you see with Marfan. But having gone over all the evidence, I do not have an opinion to any reasonable degree of medical certainty."

Lincoln's tissue may be cloned

DNA research could discover clues to his health problems and performance

by Warren E. Leary
New York Times

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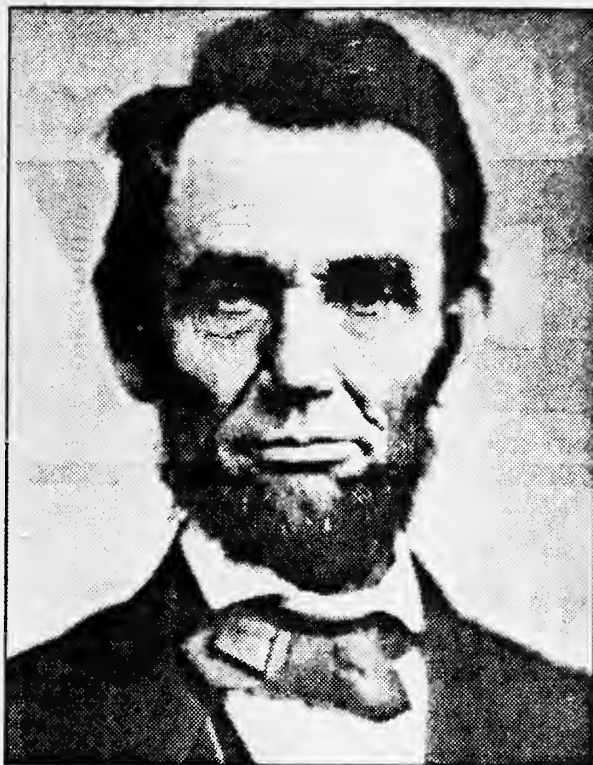
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Abraham Lincoln
Afflicted with inherited disease?

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■ A Philadelphia doctor tries to clear his grandfather who was convicted of conspiracy 126 years ago in the assassination of Lincoln. A 11.

American, pilots union reach tentative pact

WASHINGTON

Genetic cloning could be tool to explore Lincoln's health

Work would lead way in historical research

By Warren E. Leary

© 1991 The New York Times

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Locks of Lincoln's hair may be used to learn more about his health

A Proposal to Clone Lincoln's Hair

Museum says that may answer questions about his health

By Warren E. Leary

New York Times

5th Chronicle
Washington 2/11/91

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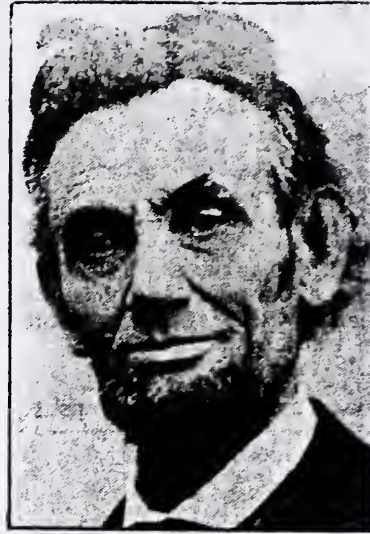
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ABRAHAM LINCOLN

He may have had rare disease

A PROPOSAL TO CLONE LINCOLN'S HAIR

From Page 1

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Lincoln's genes may help reshape history

The course of the (pistol) ball was obliquely forward toward the right eye, crossing the brain ... and lodging behind that eye. In the track of the wound were found fragments of bone ...

—From the Lincoln autopsy results

By Peter Gorner

The caretaker of Abraham Lincoln's genes thinks that biologists who want to clone them from autopsy samples and look for clues to the 16th president's genetic makeup could perform an immense service to history.

"But first, society must decide if science should do this at all," said Dr. Marc S. Micozzi, director of the National Museum of Health and Medicine in Washington. The museum has bone fragments from Lincoln's head wound and hair and blood samples.

"If scientists can perform genetic testing on President Lincoln and other historic figures, such testing could be possible on anyone," Micozzi said. "What will be done with that information? How might it affect our jobs, our families and our choices about health decisions? People should start asking these questions."

Can gene scientists really determine if Lincoln suffered from Marfan syndrome, a debilitating genetic disorder of connective tissue that afflicts 40,000 modern Americans and might well have killed him if actor John Wilkes Booth hadn't?

Would Lincoln's genes show that his lifelong bouts with "melancholia" really were a form of inherited depression and how that might have affected his presidency? Physicians and historians have been arguing these issues for 30 years.

Now biologists in Philadelphia want to reshape history by extracting genetic material, DNA, from minute samples of blood, bone and hair recovered from the president after he was shot at Ford's Theater on April 14, 1865. (He died the next morning.)

Although genes responsible for Marfan syndrome and depression have not yet been discovered, "they're going to be very soon," predicted Dr. Darwin J. Prokop, who made the request for the autopsy samples.



Photo for the Tribune by Pam Price

Dr. Marc S. Micozzi of the National Museum of Health and Medicine in Washington holds bone fragments of Abraham Lincoln.

"With the genes in hand, we then could test Lincoln's DNA and see if he carried them," Prokop said.

Prokop, chairman and director of the Jefferson Institute of Molecular Medicine, part of the Jefferson Medical College in Philadelphia, is a leading genetic researcher into Marfan syndrome and other disorders involving the cells and proteins that hold together a person's skin, bones and organs.

Prokop stressed that his proposal had nothing to do with a fantasy to try to clone Lincoln the man.

"We can extract genes from anybody's cells and clone—or make copies of—them for analysis," he said. "But we have absolutely no idea how to put them together and make a person. In Lincoln's case, that probably is too bad."

The Washington museum's collection includes seven bone frag-

See Lincoln, pg. 16

Nation/world

Lincoln

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ments totaling 10 grams from Lincoln's head wound, two locks of hair (about 180 strands) that were clipped from the wound site, and bloodstained shirt cuffs saved for posterity by the wife of Dr. Edward Curtis, a museum pathologist who performed the autopsy.

But that is just the beginning of the story.

Stored in the vaults of the unique, little-known medical museum on the grounds of the Walter Reed Medical Center are 17,000 tissue samples, along with 2.3 million documents, photographs (many of them used by filmmaker Ken Burns in his recent documentary on the Civil War) and artifacts collected since the museum's founding in 1862.

The tissues, and the genes they bear, come from surgical operations and autopsies of presidents and their assassins, soldiers and civilians, politicians and ordinary people: Presidents represented include Ulysses S. Grant, James K. Polk and Grover Cleveland.

Worldwide, museums and research institutions preserve similar remnants of past human greatness that could become fair game if Lincoln's genes do.

Micozzi, a former Miami medical examiner and senior researcher at the National Cancer Institute, finds himself in a delicate position.

"On the one hand, we're charged with preserving these materials for posterity," Micozzi noted. "On the other, we're charged with making them available for research and educational purposes, and we have a request that would destroy a tiny bit of tissue in the testing process."

The museum recently announced formation of an expert panel to study the ethical issues raised by Prokop's proposal, including privacy, the rights of descendants, and even whether the historical figure would have approved.

Although technical feasibility will be studied also, that point actually is moot.

If, after 126 years, any testable DNA remains in Lincoln's tissues (particularly the bone fragments), gene researchers can retrieve it, and they wouldn't need much. Of the 10 grams of bone chips, for instance, Prokop would require only 5 micrograms to obtain sufficient DNA for analysis (a microgram is a thousandth of a gram).

When given a chance to endure, the stuff of life has proven amazingly tough. Scientists have analyzed the genes of a frozen woolly mammoth that last strode the Siberian steppes 40,000 years ago and found it was related to modern elephants. They have identified as human a brain that had lain in a Florida bog for 7,000 years. They even have grown small amounts of DNA from an Egyptian mummy estimated to be 2,400 years old.

Lincoln possibly showed many of the symptoms of Marfan's: Affected people grow very tall and thin (Lincoln was 6 feet 4); with long, narrow faces, fingers, arms, legs and feet. Loss of fat under the skin makes them appear gaunt. Eyes may be dislocated, the chest and spine often deformed; tendons, ligaments and joints are weakened.

In 90 percent of cases, the heart or its aorta is abnormal and may suddenly rupture, causing instant death. This happened to U.S. Olympic volleyball star Flo Hyman, who died in 1986 at age 31 during a game in Japan.

Lincoln died at 56, well past the time that aortic ruptures normally occur in Marfan's patients, but the disease expresses itself in varying degrees. If a parent carries the deleterious gene, each offspring has a 50-50 chance of inheriting it and passing it on.

Last fall Prokop reported discovery of the gene for type III procollagen, which when defective, causes aortic aneurysms, a balloon-like swelling in the aorta that imperils about 2 million Americans and kills 15,000 a year when their aorta bursts. Those at risk may now be identified, and the team also developed a simple saliva test to detect carriers of the deadly gene.

If given a smidgen of Lincoln's tissue, Prokop would make a library of the president's genes—a technique called molecular cloning.

In this technique, chemicals first extract the microscopic mass of DNA from the nuclei of Lincoln's cells. Enzymes then cut the strands into specific, manageable lengths.

Next, a tiny virus called a bacteriophage (literally, "eater of bacteria," commonly known as a phage) is genetically engineered so that each virus particle contains a Lincoln DNA fragment.

The altered, or "recombinant," virus is seeded on a lawn (a single layer) of *E. coli* bacteria in a petri dish. As the virus attacks the *E. coli*, each phage injects its own hybrid genes into a single bacterial cell, commanding the host genes and transforming the cell into a virus factory churning out hundreds of copies of Lincoln's genes.

The result is a petri dish dotted by tiny holes (viral plaques) that collectively contain all the genes of Lincoln—a genomic library. Other techniques allow scientists to fish out a gene of interest and clone it in vast supply, molecularly speaking, to be shipped around the world for study.

OPINIONS



Did Abraham Lincoln look the way he did because he had a genetic abnormality? Do scientists have a right to study bone and blood samples preserved from his body to try to find out? Or should the dead — not only Lincoln but others — be allowed to keep the biological secrets that otherwise died with them?

At issue is whether the great Civil War President indeed had Marfan's syndrome, an inherited disorder that not only affects appearance but usually includes heart, eye and connective-tissue defects as well.

Individuals with Marfan's syndrome have a gaunt, lean look that "suggests the subject of an El Greco painting," as Dr. Victor McKusick, the John Hopkins geneticist who is a world-known authority on the disorder, has said.

Certainly, the description fits photographs and paintings of Lincoln. He himself talked about his "poor, lean, lank face." Pictures of him seated show that his legs were so long they sloped downward from his knees to his hips. A pair of his white gloves on display with Lincoln memorabilia shows how unusually long and

thin his fingers were.

Some historical reports say Lincoln had the eye abnormalities that are characteristic of Marfan's syndrome, but there are no records of the typical cardiovascular problems. Marfan's syndrome often includes defects in the heart and blood vessels, particularly the aorta, which can rupture without warning, causing sudden death.

If usable DNA can be recovered from the bone fragments from Lincoln's skull or blood stains on his doctor's shirt cuffs, which have been preserved in the National Museum of Health and Medicine, it could be cloned to produce enough genetic material for study. It would then be scientifically possible to reconstruct a "library" of the president's genes. Scientists are close to identifying the gene responsible for Marfan's syndrome.

So, perhaps, within two or three years, much more could be known about Lincoln's health than he himself understood during his lifetime.

Some scientists are also interested in checking out the possibility that Lincoln may have suffered from genetically based depression. However, genetic links to chronic depression are more controversial than genetic links to Marfan's syndrome. Depression also involves more complex interactions between genes and experience and circumstance — a subject of interest to



Should he be left in peace?

historians as well as scientists.

But what is scientifically possible may be ethically controversial.

There is some ethical uneasiness about probing around in the tissues of identifiable people, particularly those as prominent and revered as Abraham Lincoln. Somehow it seems more of a violation of privacy due the dead than does studying anonymous Indian bones or far more an-

cient Egyptian mummies.

The kind of DNA tests proposed for the Lincoln material would destroy a very minute quantity of it — a fact that troubles some scientists. But there is no better reason for preserving tissue from well-known people than to learn from it — a more appropriate use than displaying it in a museum case, as the Museum of Health and Medicine now does strands of Lincoln's hair and fragments of his bone.

At issue is not just the Lincoln tissue. Biological samples from innumerable famous people — including several Presidents — are preserved in museums, hospitals and research institutions. Presumably, much of this material could yield invaluable medical and historical information as gene technology improves.

McKusick will head a panel named to consider the scientific, legal and ethical implications of the Lincoln proposal before the effort is undertaken.

But the scientific challenge seems irresistible. The historic curiosity is enormous. And it is important to learn everything possible about what produces men and women of great talent and those whose lives have shaped the world for better or for worse. The panel should decide to encourage the Lincoln research — for the knowledge it can yield and for the model it can become for other, similar studies.

Editorial Plus

Lincoln samples can illuminate history ...

Did Abraham Lincoln look the way he did because he had a genetic abnormality?

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The scientific challenge seems irresistible. The historic curiosity is enormous. And it is important to learn everything possible about what produces men and women of great talent and those whose lives have shaped the world for better or for worse. So the Lincoln research should proceed — for the knowledge it can yield and for the model it can become for other, similar studies.

Joan Beck is a Chicago Tribune columnist.

... but greatness is in the mind, not body

Suppose it can be shown that Lincoln had Marfan's syndrome. So what? Establishing that he had it would shed no light on history because it would not justify inferences about the causes of historic actions.

Perhaps someday science will be able identify a genetic cause of chronic depression and will establish that Lincoln was afflicted. We know Lincoln often was melancholy and depressed. It would have been odd if he had not been, living in a city infested with spies, inundated by reports of military debacles and national fratricide.

The essence of a person is what he or she thinks, because history is the history of minds, which are undetermined.

Certainly physical facts about individuals can cause large historic effects. There is evidence that a medical fact may have been the cause of a century-shaping effect.

Recently discovered papers show that President Woodrow Wilson suffered cerebrovascular disease long before his 1919 collapse, which occurred while campaigning for ratification of the Treaty of Versailles and membership in the League of Nations.

Wilson, some experts believe, was afflicted by hypertension and intermittent small strokes and vascular incidents that interfered with brain functioning, beginning perhaps as early as 1896. His intransigence and occasional incoherence during the treaty debate (in conversation with the Senate Foreign Relations Committee in August, 1919, he made at least 30 errors of memory) may have been symptoms of this physiological problem, not, as many historians have concluded, signs of defects of character or deficits of political skills.

Obviously such science can



GEORGE
WILL

inform history. What is worrisome is that some historians will try to find in science still more reasons for writing "history with the politics left out."

Many academic historians nowadays explain the causes of great effects by radically discounting the role of mind, of ideas, of individual greatness. The human story is told too much in terms of social "structures," and classes whose consciousness are imposed by impersonal economic forces.

Such historians find more fascinating the price fluctuations in the pepper trade than the clash of ideas. Rhetoric — words used by a significant few to move the anonymous many — and the rest of politics are moved to the margin of humanity's story.

Today it is considered "democratic" to write history "from the bottom up" rather than "the top down," discounting the importance of the distinguished few. The very idea of individual greatness is considered problematic, perhaps absurd and certainly politically incorrect.

The art of biography already is suffering the ravages of psychobiographers who reduce their subjects' convictions to neuroses and ascribe to their subjects motives severed from ideas. May we at least be spared explanations of Lincoln's genius, or the "essence" of any individual, in terms of genetics.

George Will is a Pulitzer Prize-winning columnist.

Lincoln deserves final peace

By **ARNOLD ROSENFELD**

Somewhere in the federal maze there's a vagrant idea to make a DNA study of whatever's left of Abraham Lincoln. There are a few scraps still around from the autopsy — blood spots on a shirt cuff, some bone chips, a wispy lock of hair.

That's enough for a DNA study. Nobody wants to grow Honest Abe in a test tube — yet — but they would if they could figure out how. A committee, naturally, has been formed.

There needs to be a reason for doing this, and someone has predictably come up with one.

Lincoln may — or may not — have been suffering from a genetic disease. If that turns out to be so, researchers say, a lot of people who suffer from disabilities will be encouraged.

Well, maybe so, although it seems kind of a stretch.

People have a talent for finding fine, uplifting reasons for doing what they wanted to do in the first place without a reason.

At the risk of placing a stumbling block in front of science, here's one grouchy, neo-Luddite vote for not doing it.

The old horror movies used to end with someone saying, "Man was not meant to tamper with the unknown." Maybe there's something to that — if only esthetic. There is something vulgar and creepy about interrogating Lincoln's pathetic scraps.

What if, for instance, inquiring geneticists who want to know find that instead of a stately presidential disease, Old Abe ran to hemorrhoids and bunions?

Is this something we really must know? Or is this just the prurient interest of science?

What I suspect they're really looking for, a clue to Lincoln's soul, his genius, won't be found along some strand of DNA.

Leave him alone. Let him have his privacy.



Lincoln

Arnold Rosenfeld is editor in chief of Cox Newspapers.



When historians practice medicine. . .

A government museum, which possesses some of Lincoln's hair, blood and skull fragments, may allow scientists to try to clone Lincoln's tissue for analysis of his DNA, which is the determinant of heredity. What will this enable historians to explain? Not much.

Scientists might determine whether Lincoln suffered from Marfan syndrome. Many victims of that disorder are tall and gangly. But suppose he had the syndrome. So what? Establishing that he had it would shed no light on history because it would not justify inferences about the causes of historic actions.

Perhaps someday science will be able identify a genetic cause of chronic depression and will establish that Lincoln was afflicted. But note the adjective "chronic."

Anyway, for cloning to reveal something of historic importance the something

would have to pertain to a mental impairment of personality pattern. Some people believe "genes define the essence of the person." Here we reach the heart of the matter: What is essential?

I believe persons are what they read. That formulation is shorthand for: The essence of a person is what he or she thinks, because history is the history of minds, which are undetermined.

Certainly physical facts about individuals can cause large historic effects. Perhaps (it would be nice to think so) Napoleon's hemorrhoids really did have some determining effect on his conduct at Waterloo. And there is evidence that a medical fact may have been the cause of a century-shaping effect.

Last spring Arthur Link of Princeton, biographer of Woodrow Wilson, received a number of documents from the son of the man who was Wilson's personal physician at the time of Wilson's fight with Congress over ratification of the Versailles Treaty. Link says the papers show Wilson suffered cerebrovascular disease long before his 1919 collapse that occurred while cam-

paigning for ratification of the treaty and membership in the League of Nations.

Wilson, says Link, was afflicted by hypertension and intermittent small strokes and vascular incidents that interfered with brain functioning, beginning perhaps as early as 1896. His intransigence and occasional incoherence during the treaty debate (in conversation with the Senate Foreign Relations Committee in August 1919 he made at least 30 errors of memory) may have been symptoms of this physiological problem, not, as many historians have concluded, signs of defects of character or deficits of political skills.

Obviously such science can inform history. What is worrisome is that some historians will try to find in science still more reasons for writing "history with the politics left out." Such history does not treat man as a political animal, a social creature acting autonomously, moved by reasons and convictions.

Many academic historians now explain the causes of great effects by radically discounting the role of mind, of ideas, of individual greatness. The human story is told

too much in terms of social "structures" and classes whose consciousness are imposed by impersonal economic forces.

Such historians find more fascinating the price fluctuations in the pepper trade than the clash of ideas. Rhetoric — words used by a significant few to move the anonymous many — and the rest of politics are regarded as "epiphenomena," and are moved to the margin of humanity's story.

Today it is considered "democratic" to write history "from the bottom up" rather than "the top down," discounting the importance of the distinguished few. The idea of individual greatness is considered problematic, perhaps absurd and certainly politically incorrect. The consciousness of individuals or classes or nations or even entire ages is routinely written about as the "reflection" of more "real" causes. The art of biography already suffers from psychobiographers who reduce their subjects' convictions to neuroses and ascribe to their subjects motives severed from ideas. May we at least be spared explanations of Lincoln's genius, or the "essence" of any individual, in terms of genetics.

New technology may probe old mystery in Lincoln's DNA

By Beverly Merz
AMN STAFF

"I am nearly 6'4" in stature, lean in flesh, weighing 180 pounds. I have a dark complexion, coarse black hair, and grey eyes. I recollect no other marks."

This cold-eyed self-appraisal, issued in December 1859, is the closest existing approximation of a medical record for Abraham Lincoln.

That may change soon. If an expert panel gives the go-ahead, the National Museum of Health and Medicine in Washington, D.C., is prepared to compile what some consider the ultimate record of Lincoln's medical make-up — an analysis of his DNA.

Financed by a \$10,000 AMA grant, the eight-member panel of eminent physicians, scientists, lawyers and historians will be convened by the museum in May.

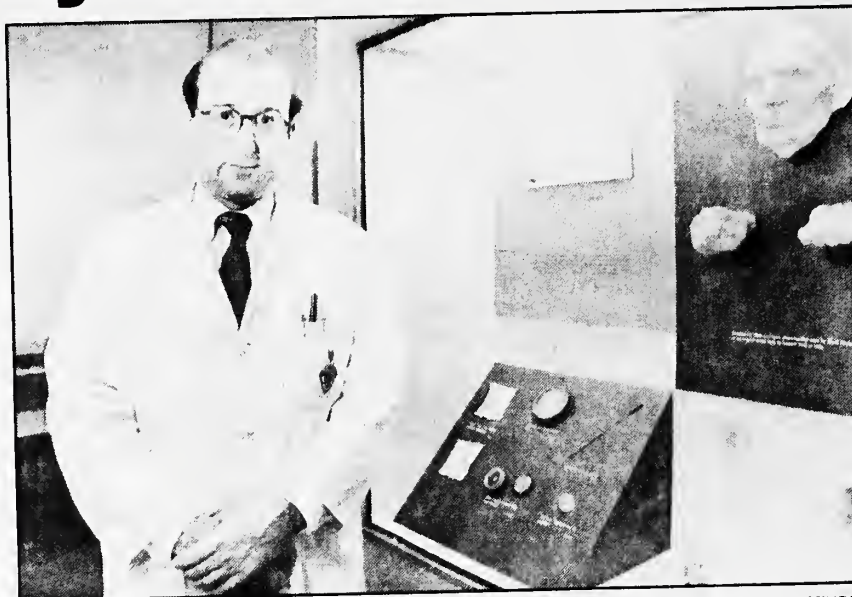
Museum Director Marc Micozzi, MD, says panelists will gather in Washington to consider the technical feasibility of performing diagnostic tests for Marfan syndrome and several other hereditary diseases using samples of Lincoln's tissues in the museum's collection. The panel also will ponder the associated ethical and legal questions.

"The AMA is excited about our participation in the program because it represents the technical application of modern medicine. It also raises great ethical, moral and social questions," said Association Executive Vice President James S. Todd, MD.

Dr. Todd sees the project as a prelude to the Human Genome Initiative, the federally funded project designed to identify all 100,000 human genes and map them to the appropriate chromosomes. Once that goal has been accomplished, it should be possible to identify aberrant genes in any individual.

"The concerns that arise with Lincoln's DNA are typical of the larger issues that will be raised by the Human Genome project," Dr. Todd says.

The panel's chairman, Victor McKusick, MD, agrees. Dr. McKusick, professor of medical genetics at Johns Hopkins University, said the expert panel would explore



JOSE R. LOPEZ/NYT PICTURES

Marc Micozzi, MD, National Museum of Health and Medicine
There are ethical and legal questions to be considered, as well as the technical feasibility of performing diagnostics.

such issues as ownership of tissues removed in medical procedures and rights of confidentiality regarding genetic information.

It will even try to discern whether Lincoln would have approved of the use of his tissue in the service of history, he said.

Those tissue samples, which are on display at the museum, include skull fragments and strands of hair removed at Lincoln's autopsy. The museum's collection also includes blood stains from the shirt cuffs of a physician who attended Lincoln after he was mortally wounded by assassin John Wilkes Booth.

THE POSSIBILITY of using these samples to gain insights into Lincoln's DNA presented itself a few years ago with the introduction of polymerase chain reaction technology. PCR, which can amplify a particular region of DNA a millionfold within minutes, has enabled technicians to replicate genes of interest from a single cell.

PCR has given paleontologists a look at the genetic make-up of extinct species and has enabled forensic scientists to identify an individual from evidence as minuscule as a single hair.

The push to put PCR to work on

Abe Lincoln's DNA experts

- **Victor McKusick, MD**, Johns Hopkins University.
- **Lawrence Mohr, MD**, White House physician.
- **Cullum Davis**, Illinois Historic Preservation Agency.
- **Edward Alexander**, American Assn. of Museums.
- **Cheryl Williams**, Marfan Foundation.
- **Tim O'Leary, MD**, Armed Forces Institute of Pathology.
- **Lynne Poirier Wison**, Strong Museum, Rochester, N.Y.
- **Philip Reilly, MD**, Eunice Kennedy Shriver Center, Waltham, Mass.

Lincoln's DNA came after the August 1990 announcement that Hopkins geneticists had found a promising candidate gene for Marfan
See LINCOLN'S DNA, page 23

way I see the world is very childish. . . I can sit and watch Sesame Street and cry. That is my misfortune."

Despite his wartime experiences, Dr. Fisch likes to focus on the humanity that people sometimes show to others. "Even the Germans tried sometimes to be humane. I often think, if you or I were to go home now and someone would come to your door

must be like to witness what he has witnessed and to endure what he has endured. I cannot imagine this, but I wonder if . . . [those hardships] haven't distinguished him and produced these positive traits."

Dr. Fisch says his experiences inspired in his professional conduct "the understanding that patients must be treated with respect, . . . that they shouldn't be powerless, that where

at the invitation of *Minnesota Medicine*, the monthly magazine of the Minnesota Medical Assn., the painting comprises a field of red and black, starkly crossed by strands of barbed wire. At the center, a shattered yellow star flies into pieces. To the artist, this illustrates "the horror, torture and suffering" of the Holocaust victims, with "each line, form and color . . . a different hue of sorrow."

Such paintings, says Dr. Fisch,

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Continued from page 1

the preferred provider organization, a coalition of local businesses that covered 70% of local women of child-bearing age (*AMN*, June 3, 1988).

During the early stages of the investigation, many of the Savannah obstetricians were subpoenaed to testify before a grand jury convened by the Justice Dept. to consider whether to bring criminal charges against the physicians. Had the grand jury voted to charge them, the obstetricians would have become the first health care practitioners indicted for criminal antitrust violations since the 1930s.

It is not clear whether the grand jury voted not to bring criminal charges against the obstetricians or the Justice Dept. decided to drop criminal charges of its own accord. Grand jury records are confidential, and Justice Dept. offi-

cials refuse to comment.

In the meantime, three dentists in Tucson, Ariz., were indicted and convicted of criminal antitrust for fixing the co-payment fees they charged dental HMO patients (*AMN*, Oct. 5). Those convictions, however, were overturned by a federal judge in De-

al consent decree (*AMN*, Aug. 17).

The resolution of the case was welcomed. "Our feeling is one of relief," said Darnell L. Brawner, MD. "We're glad to get this behind us."

Although lawyers for some of the physicians said they thought they could have fought the government's lawsuit

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'Our feeling is one of relief. We're glad to get this behind us.'

Darnell L. Brawner, MD

cember (*AMN*, Jan. 14). A Justice Dept. appeal of the judge's ruling is pending.

The consent decree and conclusion of the Savannah investigation had been expected since last summer when the Justice Dept. offered the physicians' attorneys terms contained in the eventu-

and won, they realized that their clients didn't have the money for a court battle whose conclusion none could predict.

"It is unfortunate that this was done this way, but when Uncle Sam descends on you, this is probably the best way to resolve it," said Savannah attor-

Lincoln's DNA

Continued from page 2

syndrome. Once the actual gene is isolated and the defects responsible for the syndrome identified, it would be possible to locate it in Lincoln's DNA and determine whether he had the normal or defective gene.

This would end three decades of diagnostic guessing games prompted by Lincoln's Marfanoid physiognomy. Dr.

McKusick, a leading Marfan expert, recalls that the question was first raised in 1962, after the syndrome was described in the literature. "I'd say that there's a fifty-fifty chance he was affected."

Dr. Todd says one photograph in particular, taken of the president by Matthew Brady, has lent weight to the theory that Lincoln had Marfan.

In the photo, Lincoln is sitting with one leg crossed over the other, and the toe of the raised foot is a blur. "This

has long been interpreted as a sign of aortic insufficiency, but it might just as well have been a question of a poorly focused lens," Dr. Todd says.

He acknowledges that Lincoln is also an attractive candidate for posthumous DNA diagnosis because he has no direct descendants who would be affected by the release of such information.

SHOULD the expert panel decide that invading the medical privacy of historical figures is all right, they must

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PROJECT USA

Project USA, the AMA's program that recruits physicians for short-term service in rural areas, is seeking MDs to practice family medicine at National Health Service Corps (NHSC) and Indian Health Service (IHS) locations.

NHSC vacancies are: Fairfax, S.C., March 18-29; Sparta, Ga., March 18-

29; Little Rivers, S.C., March 18 to April 5; Malaad, Idaho, March 18-29; Alamosa, Colo., March 18-29; Windsor, N.C., March 18-29; Hood River, Ore., March 18-29; and Albany, Ga., March 25 to April 5. A pediatrician is needed March 18-29 in Oakhurst, Ga.

IHS vacancies are: Eagle Butte, S.D., March 18-29; Fort Yates, N.D., March 18-29; Rosebud, S.D., March 18 to April 5; Sisseton, S.D., March 18 to April 5; Owyhee, Nev., March 18 to

April 5; Fort Belknap, Mont., March 25 to April 12; Fort Totten, N.D., April 1-19; and Kotzebue, Alaska, April 1-26.

Short-term opportunities are also available for registered nurses at a variety of IHS locations.

Project USA physicians receive a stipend and round-trip coach airfare. Contact John Naughton, AMA, 515 N. State, Chicago, Ill. 60610; (312) 464-4702.



Cloning Lincoln a crazy idea

So how'd you like to get your hands on a shiny new Lincoln? Pretty neat, yes? You take that baby around the block a few times, and you'd be the envy of everyone in the neighborhood. And then when he begins to speak: "With malice toward none, with charity for all..."

Not Lincoln the car. Lincoln the guy.

Crazy? Only maybe. Just in time for Presidents' Day, a government museum in Washington says it's thinking of trying to clone tissue samples from Honest Abe himself to figure out what was ailing him — besides being shot dead, that is, which would be ailment enough for most people. The museum's got bits of Lincoln bone and Lincoln hair and Lincoln blood hanging around; the question is: Does it have any Lincoln genes?

For years now, it seems, folks who think about such things have been wondering what else might have been wrong with the man. He was built funny, tall and gangly; they think he might have had Marfan syndrome, which could have killed him even if he hadn't gone to the theater that night. He had major mood swings; they think he might have been suffering from chronic depression all the time he was president.

That's what they think; if they can just get a look at his DNA, they might have some answers. But can they do it? Lincoln's been dead since 1865; nobody knows what the shelf life of DNA is, particularly stuff that wasn't exactly vacuum-packed to begin with. What the museum's considering, though — what it's just appointed an expert committee to think about — is testing tiny samples of Lincoln-

RICK HOROWITZ

bits to see if there is any genetic material left, and if there is, cloning it over and over until there's enough for research.

All of which raises some sticky ethical questions, starting with: Is the United States ready for a reconstituted president? I mean, say you're the Republican Party and it's 1998, and George Bush is just finishing his second term and you have to pick a possible successor. Who would you prefer, slivers of Abe Lincoln or the complete Dan Quayle?

After all, we've had blow-dried — why not freeze-dried? "Lincoln — He's Been There." It's got a certain appeal.

But we're getting ahead of ourselves. The museum people and everyone else insist — insist — that that's not what they have in mind, that this won't be some sci-fi plot run amok. "There is no way one could take Lincoln's DNA and clone a new Lincoln," says one of the experts.

Sure. Now. But who knows what they'll be able to do later? Do you think the doctors who preserved those little pieces of Lincoln back in 1865 said to themselves, "Hmmm — better hang on to this stuff so somebody in 1991 can check his DNA"? Nonsense. But you never know what might come in handy.

In fact, I've got something right here that'll come in very handy if they ever do clone Lincoln back to life. It's a genuine piece of Lincoln's law office. That's what it says on the little card it's glued to — "a genuine piece of wood from the Springfield, Illinois, law offices of Abraham Lincoln." It's light brown, about half the size of a thumbnail, and it came in the mail a few years back from an autograph dealer looking for famous-politician autographs.

I couldn't help him out, but I couldn't throw it out, either. Now I figure if Lincoln does come back, he might want to ease into things — not head for the White House right away. He might even want to pick up his law practice for a while. I want to be ready. While everyone else is thinking of cloning Lincoln, I'm thinking of cloning his office, just in case.

Or maybe George Washington, from the teeth out.

Rick Horowitz is a syndicated columnist.



DAVID KIPHUTH Gazette Illustrator

DAILY GAZETTE 2/11/91

Panel: Clone Lincoln's DNA

Probe would focus on disease

By Earl Lane

WASHINGTON BUREAU

Washington — Scientists should be allowed to clone genetic material from bone, hair and blood samples of Abraham Lincoln, an expert panel said yesterday in a decision that set a precedent for similar studies of the remains of other historic figures.

Dr. Victor A. McKusick, a geneticist at Johns Hopkins University who headed the review, said the panel gave a "qualified green light" to a proposal to study Lincoln's tissues to see whether he suffered from an inherited disorder — Marfan syndrome — that might have eventually killed him had he not been assassinated in 1865.

"The panel does not think that a definitive answer as to Lincoln's diagnosis is a major historical question," McKusick told a news briefing in a Senate office filled with Lincoln memorabilia. "Nevertheless, given Lincoln's place in history, any new fact about him is noteworthy."

Because scientists cannot yet isolate the Marfan gene, the panel said the project is not ready to proceed. It also said that "ethical guidelines on DNA testing are continuing to be developed and must be considered before a final decision on whether to proceed with analysis of Mr. Lincoln's DNA." Deoxyribonucleic acid is the molecule that carries genetic blueprint in cells.

The panel had been convened by the National Museum of Health and Medicine, which owns Lincoln tissues recovered from his autopsy, to weigh the technical and ethical feasibility of the research, given contemporary concerns about the right to privacy and confidentiality of genetic data.

The panel concluded that because Lincoln has no direct descendants and has been dead for 126 years, there was "no compelling legal argument to deny access to the samples." Specialists said the panel's decision inevitably will stimulate interest in genetic analysis of tissues from other historic figures; however, the panel did not recommend a blank check for scientists to conduct such studies.

"They may say it's not a precedent for anybody else, but of course it is," said George Annas, a specialist on medical ethics at Boston University. Scientists already have isolated and studied DNA samples from Egyptian mummies and from the 7,000-year-old remains of an Indian found in a Florida bog. But the proposed study of Lincoln — given his place in history — has drawn wide attention.

Cullom Davis, a prominent Lincoln scholar who was on the review panel, said solving the Marfan question "is not central to understanding the life or work" of Lincoln. Marfan syndrome, has no effect on the mental capacity of victims. It is a connective tissue disorder that can cause fatal abnormalities in the heart and produces a



Scientists will be allowed to try to clone Abraham Lincoln's genetic material.

CONTINUED.....



Abraham Lincoln, the 16th president of the United States

Probe of Lincoln DNA

LINCOLN from Page 2

gaunt, lean look in sufferers. It affects about 40,000 Americans.

Of more interest, according to some specialists, is speculation by biographers that Lincoln may have suffered bouts of depression that affected his public life. Scientists have been searching for genes that predispose humans to depression, but the effort has been unavailing so far. In any event, the nine-member review panel said a broader analysis of Lincoln's genetic makeup should not be attempted without further review. "Proposals for other research use of the Lincoln DNA would require separate scrutiny and judgment," McKusick said.

The panel, composed of scholars, scientists and museum professionals, concluded that the main reason for pursuing the Lincoln DNA study is to increase understanding and awareness of Marfan syndrome. Annas questioned that rationale. "If that's the strongest case they can make, I guess I would say it should not be done," he said.

The review panel was convened by the museum, which in addition to Lincoln's tissues, owns more than 17,000 other samples, including those from Presidents Ulysses S. Grant, James K. Polk and Grover Cleveland. The museum is located on the grounds of Walter Reed Army Medical Center.

The final decision on whether to begin the experiment will be up to the board of governors of the Armed Forces Institute of Pathology. The National Museum is part of the institute. If all the approvals were granted, the testing could begin early in 1992, museum director Dr. Marc Micozzi said.

Museum curators have expressed reservations about the interest in historical remains because the DNA studies require destroying small quantities of the artifacts.

The Lincoln tissues were obtained in the autopsy performed after his assassination on April 14, 1865, by John Wilkes Booth. They include two locks of hair — totaling about 180 strands less than two inches long — and seven bone fragments from the head wound where the president was shot. The museum



File Photo

President Lincoln's hair at the National Museum of Health and Medicine.

also has the blood-stained shirt cuffs of the doctor who performed Lincoln's autopsy.

It remains to be seen whether any testable DNA remains in Lincoln's tissues, but experts were optimistic that the samples would be useable.

Specialists, citing Lincoln's physical appearance and other clues, have been speculating since the 1960s that he was a Marfan victim. But there is no record that he suffered from the Marfan-related heart problems. Lincoln was 56 when he was assassinated, older than most 19th-Century Marfan victims lived to be.

The proposal to study Lincoln's DNA came from Dr. Darwin J. Prockop, a specialist in connective tissue research at Jefferson Medical College in Philadelphia. Prockop said yesterday that the study could cost from a few hundred dollars to thousands, depending on the technical difficulty of isolating and cloning — or duplicating — the Lincoln DNA.

While researchers may be able to clone fragments of Lincoln's DNA in the laboratory, McKusick and others have stressed that there is no way they could take that DNA and clone a new Abe Lincoln. Science fiction tales notwithstanding, they said, such techniques are not considered possible now or in the foreseeable future.

Panel Backs DNA Tests on Lincoln's Tissue

By WARREN E. LEARY

Special to The New York Times

WASHINGTON, May 2 — There are no compelling legal or ethical reasons to bar an attempt to clone Abraham Lincoln's genes from tissue samples obtained at the time of the President's assassination, a panel of experts concluded today.

The committee, assembled by the Government museum that holds samples of Lincoln's tissue, said it considered issues of privacy, probable consent, ethics and law, and gave the proposal a "qualified green light."

The nine-member panel, headed by Dr. Victor A. McKusick, professor of medical genetics at Johns Hopkins University, concluded that there was merit in the proposal to see if Lincoln suffered from a potentially fatal genetic disease called Marfan's syndrome, which is characterized in part by a tall, gauging appearance.

In February, the National Museum of Health and Medicine, an affiliate of the Armed Forces Institute of Pathology, asked the committee to advise it on whether to examine the samples of Lincoln's hair, bone chips and blood stains in its collection to see if any DNA remains 126 years after the Lincoln's death. Such tests would require the destruction of a small amount of the samples.

Building Block of Heredity

The panel's conclusion is that exploration of the technical aspects of the Lincoln DNA Marfan study be encouraged to proceed," Dr. McKusick said at a news conference. DNA is the basic building block of heredity that makes up 80,000 to 100,000 genes, which contain the biological essence of a person.

Dr. McKusick and other panel members said there was no urgency in beginning laboratory work on the tissue samples because a definitive genetic test for Marfan's has not yet been developed. In addition, they said, the panel wanted to consider the latest test methods and look for ways that might produce the highest yield of genetic material from the smallest amount of sample. Panel members



Paul Hosefros/The New York Times

Dr. Victor A. McKusick, the head of a panel that recommended performing tests on samples of Abraham Lincoln's tissue.

said it would be at least a year before any DNA cloning could be tried.

After the news conference, Jeremy Rifkin, a frequent critic of genetic research who heads a Washington-based organization called the Foundation on Economic Trends, said he would oppose the project to clone Lincoln's DNA and would ask Congress to investigate the social, ethical and commercial implications of working with the genetic materials of dead people.

"The scientists involved in this study are using the corpse of a revered President of the United States for a public relations stunt to draw attention to research funds for a particular cause," Mr. Rifkin said.

'Very, Very Good Chance'

Dr. McKusick said several research groups are working on isolating gene and defect that causes Marfan and that a test should be available for the end of the year.

Dr. Victor Weedn, a panel member who is chief of the Armed Forces Identification Laboratory, said there was a "very, very good chance" the Lincoln tissue samples contained DNA, although no one could know intact it is. "DNA tests have been performed successfully on many old skeletal remains," Dr. Weedn said, adding that it was very likely that scientists get useful DNA from the Lincoln samples, particularly the blood and specimen.

Genetic tests could reveal if Lincoln was afflicted with the inherited connective-tissue disease, as some experts suspect. The disease could have shortened his life prematurely even if Wilkes Booth had not fired his shot. Lincoln was 56 years old when he died.

Marfan's syndrome, which the National Marfan Foundation estimates affects 40,000 Americans and one in 5,000 people worldwide, can result in abnormalities and weakness in bones, joints, eyes, the heart and blood vessels. Sufferers often grow to be tall gangly with unusually long limbs and fingers. They are at increased risk of death from exertion that causes the aorta, the main artery from the heart, to burst.

Cheryl Williams, president of the Marfan foundation and a member of the Lincoln panel, said that if Lincoln is shown to have had the disease, it would be inspirational to Marfan patients and show everyone that a person with genetic disease can achieve great things. "It will foster research and increase public awareness of Marfan syndrome," she said.

Friday, May 3, 1991

Panel urges caution in Lincoln tests

Associated Press

WASHINGTON — Scientists should proceed cautiously with plans to test bone fragments, hair and blood stains from Abraham Lincoln to determine whether he had Marfan syndrome, an advisory panel recommended Thursday.



Lincoln

Because scientists are not technically able to do such testing, the panel did not give a final go-ahead, and added that "ethical guidelines on DNA testing are continuing to be developed and

must be considered before a final decision on whether to proceed with analysis of Mr. Lincoln's DNA."

The panel was convened by the National Museum of Health and Medicine, which holds 10 bone fragments from Lincoln's skull recovered when doctors performed an autopsy after the 16th president was assassinated. Also in the museum's possession are samples of Lincoln's hair and blood.

Using these 126-year-old specimens, new techniques may make it possible to clone Lincoln's DNA and determine whether he had Marfan syndrome, which may have given him his tall, gaunt appearance. These techniques could be ready next year.

Lincoln genetic study is OKd

New York Times News Service

WASHINGTON—There are no compelling legal or ethical reasons to bar an attempt to clone Abraham Lincoln's genes from tissue samples obtained at the time of his assassination, a panel of experts has concluded.

The committee, assembled by the government museum that holds samples of Lincoln's tissue, said Thursday that it considered issues of privacy, probable consent, ethics and law, and gave the proposal a "qualified green light."

The nine-member panel, headed by Dr. Victor McKusick, professor of medical genetics at Johns Hopkins University, concluded that there is merit in the proposal to see if Lincoln suffered from Marfan's syndrome, a potentially fatal genetic disease, which is characterized in part by a tall, gangling appearance.

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CHL
TR 13
5-3-91



LINCOLN
Still stirrin'.

Docs get OK for clone studies on remains of Lincoln

Washington Post

WASHINGTON — A controversial plan to test fragments of DNA cloned from fragments of Abraham Lincoln's hair, blood and skull has been given the go-ahead by a specially appointed ethics committee.

The experiment would attempt to settle the long-standing historical controversy over whether Lincoln suffered from Marfan's syndrome, a sometimes-fatal disorder of the connective tissue that can produce abnormalities of the heart, skeleton and eyes.

In announcing the decision, the nine-member special panel — convened by the National Museum of Health and Medicine, where a portion of Lincoln's remains is stored — stated it did not think such tests would violate Lincoln's privacy or breach any ethical norms, particularly since he has been dead for 126 years and has no living descendants.

Other ethicists, however, questioned the conclusions of the panel, saying adequate cause had not been found for the extraordinary step of exhuming the genetic records of an individual without his consent.

Lincoln spent his whole life trying to teach the nation to transcend biology," said Arthur Caplan, a bioethicist at the University of Minnesota. "Now he winds up being reduced to his own biology.

"He spent his whole life trying to tell us that race was something not to be limited by; now he winds up under the microscope with people trying to reduce his thoughts and deeds to DNA strips."

TUESDAY, MAY 7, 1991

NEW YORK POST

Founded by Alexander Hamilton in 1801

PETER S. KALIKOW Publisher
JERRY NACHMAN Editor
LOU COLASUONNO Managing Editor
ERIC BREINDEL Editorial Page Editor
JOHN COTTER Metropolitan Editor
STEVE CUOZZO Assistant Managing Editor

America's oldest continuously published daily newspaper

95-23
Mark
Looks like
Cullom is on
to another
popular issue
Hawth

The Lincoln intrusion: a ghoulish enterprise

Speaking of presidents, last week an advisory panel appointed by the National Museum of Health and Medicine approved a plan for a genetic probe of the remains of Abraham Lincoln. The alleged goal of the bizarre scheme? To determine, through DNA testing, whether the 16th president suffered from Marfan's syndrome, a genetic disease of the connective tissue.

During the 1960s, some doctors speculated that the tall and gangly Lincoln had been a Marfan's sufferer. The question became a sort of minor controversy among Lincoln scholars, tempting the Museum of Health and Medicine, where a portion of Lincoln's remains are stored, to allow geneticists to investigate.

But those who proposed to do so needed to justify the decidedly offensive plan, which violates Judeo-Christian strictures concerning the sanctity of the dead. After all, this would not be an autopsy connected to a current criminal or public-health matter.

The scheme was rationalized in accordance with the pop psychology of the politically correct: If it turned out that Lincoln had, in fact, suffered from Marfan's syndrome, the advisory panel as-

serted, the discovery would "enhance the self-esteem of persons who are carriers of the . . . syndrome"

Let's hope those who advanced this argument don't actually believe it. Let's hope they merely wanted to satisfy their historical curiosity — and sought an excuse that might be deemed socially acceptable.

But if self-esteem enhancement is, in fact, the point of this questionable exercise, it suggests that the history-as-therapy approach to education has gotten a bit out of hand.

In any event, the life and work of Abraham Lincoln should inspire every American. All of us would do well to ponder the manner in which the 16th president — born in poverty — educated himself by reading from the classics.

It isn't necessary to know more about Lincoln's DNA, or to have the counsel of a bio-ethicist, to realize that Lincoln spent his political life trying to teach Americans to transcend biology. The effort to drag his remains out of a museum and put them under a microscope seems designed to reduce the magnificence of Lincoln's public works to the stuff of DNA strips.

Leave Abe Lincoln's remains alone.

Armed Forces Institute of Pathology
Washington, D.C., 20306-6000



Fax Number: Commercial: (202)576-2164 Autovon: 291-2164

Coversheet plus 1 page(s)

Date: 5/16/91

Time: _____

Authorization: _____

To:

Dr. Neely

From:

Dick Levinson

FAX:
PHONE:

PHONE:

(202) 576-2348

Remarks

Dear Mark, Here is The
Lincoln Amendment. — Dick

Fax Confirmation

Office of the Headquarters Commandant
(202) 576-2914; 8-291-2914

[REDACTED]

5/13/91

12

AMENDMENT TO H.R. 2100, AS REPORTED
OFFERED BY [REDACTED]

At the end of title X of the bill, insert the following
new section:

1 SEC. 1033. PROHIBITION ON THE USE OF REMAINS OF ABRAHAM
2 LINCOLN.

3 The Secretary of Defense may not permit any of the
4 physical remains (including hair, blood, and skull samples)
5 of former President Abraham Lincoln in the possession of the
6 National Museum of Health and Medicine of the Armed Forces
7 Institute of Pathology on the date of the enactment of this
8 Act to be used for purposes of gene or other research.

Observer

RUSSELL BAKER

Grave Confounded

After Bing Crosby died his son Gary published a book saying his dad had been a truly terrible father. This prompted Bob Hope to observe, "It's not even safe to die anymore."

Zachary Taylor, former President of the United States, dead since 1850, might have said, "Bob never spoke a truer line," had he been capable of issuing a press release when the knock came at his mausoleum door the other day. He was about to be hauled out for further study. Someone writing a book suspected he may have been poisoned, so an obliging

Is nobody safe from science?

coroner had agreed to subject him to the indignities modern science is uniquely qualified to inflict.

This follows by only a few months a decision to let scientists have a crack at cloning some Abraham Lincoln cells so they can learn whether the Great Emancipator suffered from a disease nobody even knew about in Lincoln's time: something that has to do with making people tall, gangling and loose-limbed.

It's tempting to justify this by telling the scientists, "Find out what disease Lincoln had and send some to all our Presidents." Alas, however, knowing science's mad-doctorish passion to make the 150-year-old human a commonplace, we can be sure that the knowledge would not be used to improve Presidents but to wipe out a potentially invaluable disease.

Is nobody safe from a prying science driven by righteous curiosity? One of the few consolations of the grave used to be that you could take your secrets there with the certainty that they would be safe from busybodies. Its power to make secrecy eternal helped people keep life in perspective.

One stood beside the grave while clergy uttered the closing words, and one of the thoughts that ran through your mind was: "Now I'll never know..."

After awhile it seemed not so important that you could never know, and as time did its work you realized that one of life's conditions was that you would never be allowed to know as much as you wanted to know. Life surrounded us with mysteries, which

could be maddening unless you relaxed and enjoyed the way they enriched life's texture.

Solve a mystery, it becomes a bore. As Edmund Wilson asked of Agatha Christie's whodunnit: "Who Cares Who Killed Roger Ackroyd?" Some mysteries enchant us so intensely that we reject any evidence that would deprive us of the pleasure of their company. A hundred years from now Americans will still be arguing whether Lee Harvey Oswald did it all by himself, or at all.

The impulse to take the fun out of life by solving all the mysteries is as old as Adam. What's new is the scientific skill we can now apply to the job. As it increases, the wretched dead will have more and more reason to lie uneasy in their graves awaiting the dreadful knock which signals that the lab boys have arrived.

"Aha, my good man, we have come for your secrets. No use making a fuss about it. And don't think you can hold anything back. Nowadays we have ways of making you talk."

Disturbing dead Presidents to satisfy modern curiosity is barbaric enough now when inquisitive science can examine them only for problems like arsenic and loose-limb disease. Imagine the complications when science perfects methods to solve more complex mysteries.

In recent years, for instance, some people have insisted that Lincoln, despite the superficial evidence (the Civil War, the Emancipation Proclamation, etc.) was, in fact, actually a racist.

At present scientists cloning Lincoln's cells may be able to find diseases he didn't know he had. They will assure you, however, that they will never be able to clone a complete Lincoln which can be strapped to a lie detector and examined for inner feelings of bigotry.

They always laugh and call such suggestions "Buck Rogers stuff." Then they do it all: space stations, spliced genes in pig blood, the full Buck Rogers/Doctor Huer bonanza. Poor old Abe. I can see him already cloned, strapped to the machine, Pentagon security experts watching the needles jump.

"Have you been cloned, Mr. Lincoln?"

"I have indeed, gentlemen."

"All right, Lincoln. Give it to us straight from the shoulder: You're a racist, aren't you?"

In the immortal words of Fats Waller, "Mercy!" □

I'M PREGNANT WITH ABE LINCOLN'S BABY!

By JOE BERGER
Staff writer

Excited secretary Ella Landry volunteered to take part in a top-secret scientific project, and in a flash the lady was pregnant — with Abraham Lincoln's baby!

Eager Ella, 26, was impregnated with sperm cloned from Abe's blood and bones — and on Jan. 6, 1992, she'll give birth to the most amazing baby the world has ever known.

"The scientists took a tiny sample of President Lincoln's blood and actually created a sperm cell with the same genetic pattern as Lincoln's," said the blonde mom-to-be. "So we're hoping this child will be an exact copy of him."

"They say if this experiment works, we'll be able to produce duplicates of all our great people right and left. We want another Albert Einstein, we create another Albert Einstein. We want another Elvis Presley, we create another Elvis Presley."

"I'm so psyched up I can't wait to see if my son turns out to be the actual second coming of Abe Lincoln."

The unmarried woman from Baltimore, Md., got involved in the clandestine experiment after answering a newspaper ad for adventurous volunteers.

"They wanted single women between 21 and 28, and at least two dozen of us showed up at their office," Ella told a reporter. "They gave us all real thorough physicals and three days of mental and psychological tests."

"And when they were done, they chose me. They said I have an I.Q. of 168 and boy, was I stunned. I'd always thought I was kind of a dummy."

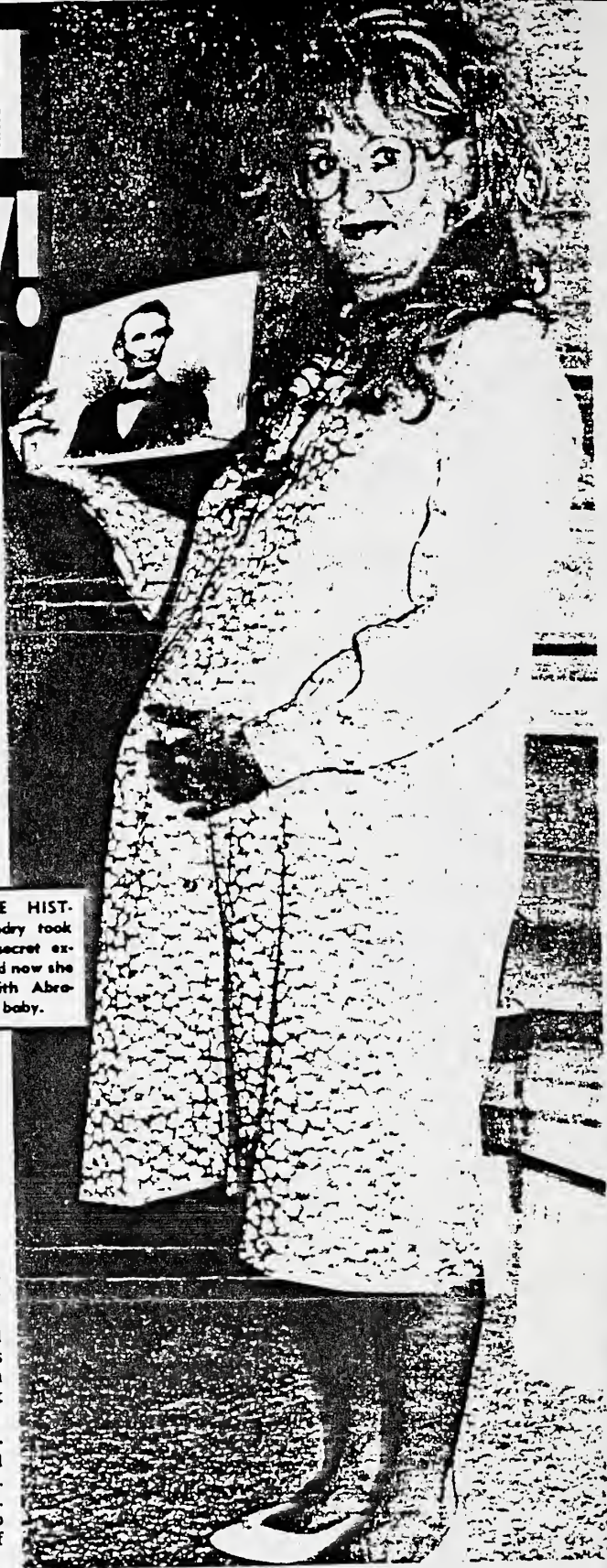
But the unsuspecting secretary really got a shock when she learned what the renowned researchers had in store for her.

"When they told me they wanted me to have a baby, I almost flipped," she re-

... and I'll give birth on Jan. 6, 1992!



SHE'LL MAKE HISTORY: Ella Landry took part in a top-secret experiment — and now she is pregnant with Abraham Lincoln's baby.



NEWS EXCLUSIVE!
It was bound to happen, says genetic expert

called. "And then they sat me down and explained the whole thing to me — what it could mean to the future of mankind — and I decided I'd be honored to get pregnant in the name of science."

But Ella has refused to identify any of the two dozen doctors and geneticists involved in the hush-hush project or to reveal the location of their secret laboratory.

"These are very fine scientists and they've stressed from the start that this has to be an underground experiment because a lot of people just don't approve of this sort of thing," she explained.

"I know they're going to be upset because I'm talking to the press and I signed a contract to keep everything confidential. But I just couldn't keep quiet anymore. And there's really nothing they can do about it now — because I'm the mother of Abraham Lincoln's baby."

Mark - I know you'll give this all the attention it deserves.

Terry

APRIL 15, 1992

HEADLINES

WEDNESDAY

Panel backs DNA testing and standards

WASHINGTON (AP) — Both the FBI and civil libertarians found things they liked in a federal scientific report that endorsed use of genetic fingerprinting in court cases while urging closer scrutiny of laboratory procedures.

A National Research Council study released yesterday endorsed the validity of genetic typing to identify criminals and exonerate the innocent. But it said national testing standards were needed.

Victor A. McKusick, chairman of a council panel of experts, said the committee found no reason to call for a halt in use of the current genetic identification system, called DNA fingerprinting.

McKusick, a Johns Hopkins University gene expert, also told a news conference the panel found no cause for courts to re-examine past criminal cases influenced by DNA fingerprinting evidence.

Law enforcement leaders, defense attorneys and civil libertarians rushed to interpret the report as buttressing their arguments for or against the practice.

New York defense attorney Peter Neufeld, a critic of DNA testing, said "hundreds of convictions could be reopened" as a result of recommended changes in the way DNA evidence is analyzed and tested.

However, FBI Director William Sessions said the report "confirms our strong belief that the FBI's DNA testing approach is scientifically sound."

DNA fingerprinting matches an individual with biological evidence gathered at a crime scene. It is based on the fact that the genetic pattern, as carried in the molecule of deoxyribonucleic acid, or DNA, is unique for each person, except for identical twins.

The report recommended that DNA test procedures be regulated by the federal government, which

President's genes could be studied

WASHINGTON (AP) — Bits of bone, hair and blood housed in a Washington museum may answer a question about the genetic makeup of Abraham Lincoln.

The artifacts were recovered during Lincoln's autopsy in 1865 and are displayed at the



National **Lincoln: Did he have a disorder?** Museum of Health and Medicine at the Armed Forces Institute of Pathology.

A committee of experts was to issue a recommendation today on whether science has advanced sufficiently to extract Lincoln's gene pattern from the items.

The study could determine if Lincoln suffered from Marfan syndrome. Historians have suggested Lincoln had the disorder because of his elongated hands and limbs.

would accredit crime laboratories and certify the qualifications of employees.

It also urged trial judges to carefully scrutinize the procedures followed by crime labs for testing each sample of blood, semen, hair or skin found at a crime scene and matching it with the genetic material of a suspect.

Committee Urges Delay in Cloning Lincoln's Genes

By WARREN E. LEARY

Special to The New York Times

WASHINGTON, April 15 — An attempt to clone the genes of Abraham Lincoln to see if he had Marfan's syndrome should be delayed until DNA test techniques improve and more is known about the genetic cause of the disease, a panel of experts said today.

The experts, convened by the National Museum of Health and Medicine, which has tissue samples obtained at the time of Lincoln's assassination, said more should be learned about the gene that causes Marfan's before researchers try to find evidence of it in those samples.

The committee, led by Dr. Victor A. McKusick, professor of medical genetics at Johns Hopkins University, also concluded that techniques used in recovering and cloning enough DNA from historic material for analysis would probably improve over the next few years. Delaying the effort until genetic techniques improve should result in using less of the preserved material in the destructive tests, it said.

Bone, Hair and a Cuff

Army doctors who conducted an autopsy after Lincoln was shot to death by John Wilkes Booth in 1865 saved pieces of bone, locks of hair and a bloodstained cuff. The specimens are housed in the museum, part of the Armed Forces Institute of Pathology, and some are on display.

Last year the museum decided to investigate a suggestion that the tissue might be examined for evidence of Marfan's, an inherited disease that results in abnormalities and weakness in bones and joints, eyes, the heart and blood vessels. Sufferers typically grow to be tall and gangly.

Some historians have suggested that Lincoln had Marfan's because he had some of these characteristics.

Last May, a panel of experts convened by the museum concluded there were no legal or ethical reasons to bar an attempt to use Lincoln's tissue to

Scientists want to test a President's remains for a genetic disease.

clone and reproduce any remaining cellular DNA. DNA is the basic material of heredity.

Gene Discovered Last Year

Dr. Marc S. Micozzi, director of the Washington museum, said experts felt it might be two or three years before all the mutations of the Marfan gene are fully identified. The gene itself was discovered only last year. He indicated that the museum would follow the recommendation of the panel.

Because researchers do not know all the genetic variations that could lead to Marfan's, it is possible that tests could miss one that might exist in Lincoln's gene reservoir and produce an incor-

rect conclusion, Dr. Micozzi said. "The longer we wait, the greater likelihood that we will get a definitive answer," he said, "so we won't lose anything by a delay."

In the meantime, the panel suggested another type of study that could result in cloning and reproducing another kind of DNA from Lincoln. A few strands of Lincoln's hair could be used to find, characterize and reproduce his mitochondrial DNA. This type of DNA, located outside the nucleus of cells, contains only a small part of the genetic information found in nuclear DNA.

The panel said that mitochondrial DNA could be used to authenticate other biological specimens purported to be from Lincoln. At least six other collections of materials associated with Lincoln claim to have blood stains and other biological materials, Dr. Micozzi said. If more Lincoln specimens can be found, it would increase the pool of material that could be used for further genetic studies and decrease the impact of the destruction of some samples during testing, he said.

Thursday, May 16, 1996 • DAILY NEWS

Keep watch for Abe's DNA comeback

Four score and seven years ago, Americans never would have imagined they'd be able to buy President Lincoln's DNA — and wear it.

Come August, they'll be able to do just that if StartGene Inc. in San Rafael, Calif., has its way. The company plans to replicate Honest Abe's genetic code and encase it in a collectible pocket watch. It's the brainchild of Dr. Kary Mullis, the eccentric 1992 Nobel Prize winner who was once listed as a DNA expert in the O.J. Simpson trial.

The company obtained a lock of hair from Lincoln, and, through the polymerase chain reaction that Mullis discovered — similar to the fictional dinosaur replication process in "Jurassic Park" — chromosomes from the late President's hair will be replicated and encased in a polymer gem stone in the watch.

The DNA was in a hair sample taken by Dr. Leale, a physician who examined Lincoln in the time of his death, said StartGene's Carole Zimmerman. "It's been in a beautiful sealed box all this time."

StartGene has an exclusive contract with University Archives in Stamford, Conn., which houses 80 locks of hair once adorning the heads of Elvis, Einstein, J.K. & Charles Lindbergh and others.

Scientists at the StartGene lab are authenticating the Lincoln sample this month, with tests to be completed Monday. If all goes well, StartGene will reproduce a limited edition of 5,000 watches, selling at about \$195 apiece.

"DNA is the blueprint of the soul," Zimmerman said.

The company is hoping to offer reliquary-like jewelry bearing the DNA of Marilyn Monroe, Robert E. Lee, Geronimo, Napoleon and others.

"We are interested in a line of Mary Pickford earrings," Zimmerman said.

Mullis, who surfs daily and has admitted experimenting with LSD, was asked if this might not lead, with improved technology, to President Lincoln's being cloned by scientists who get bored of the watch.



Abe Lincoln:
Another politician in
your pocket?

"I'm not worried about that," Mullis told The News. "Maybe sometime in the future. He was a pretty good President. But the cost would be prohibitive. And really, what you'd get is the little baby Lincoln, and you'd have to raise him in a log cabin all over again."

But would the private company consider producing trinkets bearing at least the partial DNA of someone as evil as Hitler?

"Why not?" Mullis said. "People could take the DNA and boil it every morning."

What about live celebrities? "We wouldn't produce it without the celebrity's permission," Zimmerman said. "We certainly would if we had the rights to do it."

Like who?

"Legendary figures," Zimmerman said. "Like Frank Sinatra, Elizabeth Taylor and Leonard Nimoy."

Hold on to your hats.



RESEARCH
#562

StarGene, Inc. - Background

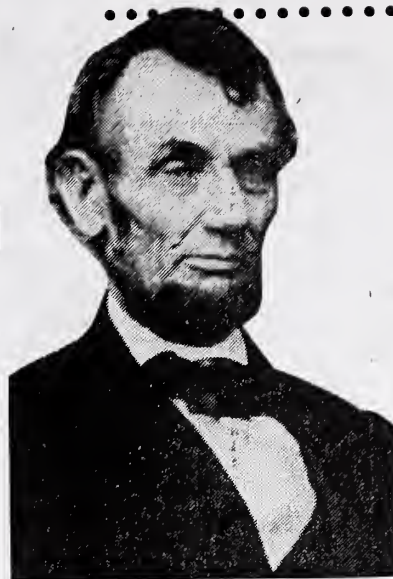
StarGene, Inc. has created a unique line of consumer bio-collectibles containing the DNA or "genetic essence" of the stars. The production of DNA relies on the Polymerase Chain Reaction (PCR), a patented process that was invented by one of StarGene's founders, Dr. Kary Mullis. Dr. Mullis was awarded the Nobel Prize in Chemistry in 1993 for his invention of PCR which amplifies and replicates DNA. Under this process a strand of hair or a flake of skin can be a source for DNA which then can be reproduced into thousands of identical copies in a matter of minutes....a revolutionary breakthrough in science and medicine.

While the patented PCR technology is owned by Hoffman LaRoche, StarGene, Inc. holds an exclusive, worldwide license to market DNA collectibles using PCR. The business strategy of the company is to acquire licensing rights to the DNA of current and deceased celebrities from the fields of entertainment, music and sports and create a line of exclusive products displaying the "genetic essence" of the celebrity. The company has developed a proprietary GeneStone™, a gem-like resin, that will encapsulate and visually preserve the DNA of the celebrity. StarGene will license its GeneStone™ technology to existing marketers of collectibles as well as develop and distribute an exclusive line of jewelry, framed memoirs and photos.

To finance the professional design, manufacturing and marketing development of StarGene's exclusive product line, the company currently is raising its second round of investment. As soon as the US model proves itself viable, the company plans to expand its business to Canada, Europe and other developed markets, as allowed under the Hoffman LaRoche's worldwide license to market DNA collectibles.

StarGene plans to devote a substantial part of the funds raised to the development of an in-house management organization to assure that new product development and international expansion are professionally planned and executed. StarGene anticipates that during the initial stages of its marketing development, it will enter into strategic corporate alliances as well as license agreements with entertainment, sports and collectibles marketing companies. This will leverage its product distribution through pre-existing marketing channels. StarGene will use these companies' promotional capabilities to develop a better understanding of these marketing channels.

Introducing the first new product concept into the collectibles market since the development of the trading card, StarGene is being recognized as an innovator of new products and new markets. StarGene's bio-tech approach to this market is revolutionary and it is expected that the combination of a) an exclusive worldwide license from Hoffman LaRoche, b) patent protection for the company's product line and c) the worldwide reputation of Dr. Mullis as the Nobel Laureate who invented the PCR process, will create significant barriers to entry for others who might want to enter the bio-collectibles market. This will allow StarGene to become the marketplace leader in this niche and capture a dominant share of the worldwide market within this industry.



Abe Lincoln

By John Wilkens

When last we heard from **Kary Mullis**, La Jolla's acid-dropping Nobel laureate, he was set to share his DNA expertise with the jury that eventually freed **O.J. Simpson**.

He was never called to the stand, but now Mullis and DNA are back in the news with a scheme to replicate **Abraham Lincoln's** genetic code and sell it encased in pocket watches.

Seems that StarGene Inc., a San Rafael company, has gotten access to locks of the president's hair, clipped by a physician after Lincoln was assassinated in 1865. The locks have "been in a beautiful sealed box all this time," a StarGene spokeswoman says.

Using DNA wizardry developed by Mullis, the company has pulled genetic material from Lincoln's hair. It will then replicate the chromosomes and other stuff and encase them in a gemstone that will be part of a limited-edition pocket watch.

A timepiece and piece of Abe, all for \$195! StarGene says they could be on the market by August.

So, could Lincoln actually be cloned — a la Jurassic Park — by someone who buys one of the watches?

"Maybe sometime in the future," Mullis said. "But the cost would be prohibitive. And really, what you'd get is the little baby Lincoln, and you'd have to raise him in a log cabin all over again."

HEALTH AND EDUCATION

Lincoln's DNA cloaked in debate

Wife's garment may hold bloody clues to health

The Associated Press

CHICAGO — For years, the blood-spattered velvet cloak that Mary Todd Lincoln is believed to have worn the night President Lincoln was shot has hung mostly untouched.

But with recent developments in DNA testing, experts say the garment could reveal some of the mysteries surrounding the health of the nation's 16th president.

History buffs at the Chicago Historical Society acknowledge, however, that testing could destroy a valuable relic of history and prove false some of the stories and myths about Lincoln.

"The question at hand is what value would DNA testing have and would it be worth the risks of losing a historical specimen," says Nancy Buenger, textile conservator at the society.

"We also have to ask: 'Do we want to know? Do we really want

all these wonderful mysteries solved?'"

A group of scientists, conservators and historians met to debate those issues and recommended that the society hold off on testing. The society says it probably will abide by the recommendation.

Testing could settle a long-running debate on whether Lincoln had Marfan syndrome, a genetic disease that makes people susceptible to blood clots.

The syndrome could account for Lincoln's gangly appearance. It also could have proved fatal if assassin John Wilkes Booth's bullets at Ford's Theatre had not.

Testing on the cloak and about a dozen other items, including the sheet thought to have come from Lincoln's deathbed, could help authenticate much of the society's collection.

Even with DNA testing, Buenger says, proving the blood was Lincoln's would be difficult because no samples have been taken from his remains and he has no living descendants.

Robert Gaensslen, director of forensic science at the University of Illinois at Chicago, says the cons of testing still outweigh the pros.



By Charles Bennett, AP

Blood trail: Conservator Nancy Buenger holds a swatch that may contain Abraham Lincoln's blood. In back is Mary Todd Lincoln's cloak.

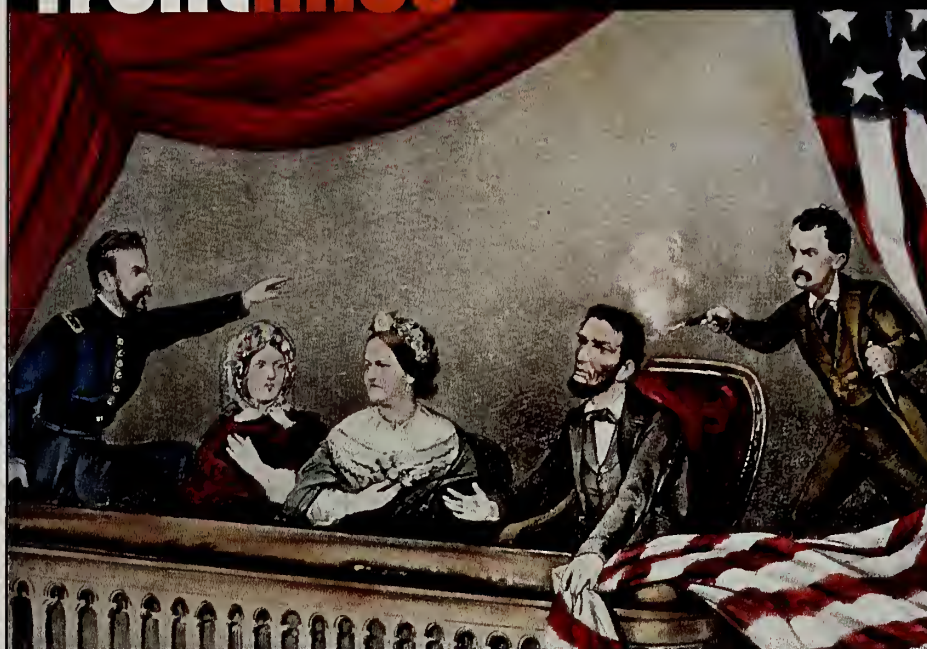
He says current methods to extract DNA include cutting specimens or removing blood from them. "We have to be cautious before we cut."

Not everyone agrees.

Victor McKusick, a medical geneticist at Baltimore's Johns Hopkins University who has pushed for DNA testing of Lincoln artifacts, says scientific developments

have come so far that testing would cause minimal damage.

"The interest in finding out is tremendous," says Darwin Prockop, a gene therapy researcher at Philadelphia's MCP Hahnemann University. Testing the cloak, he says, "could answer an important historical question that could go far in helping those struggling with the disease today."



History

In Old Blood

By DNA-testing a cloak thought to be stained by Abraham Lincoln's blood, the Chicago Historical Society stirs debate about the rights of the dead

INSIDE THE CHICAGO HISTORICAL SOCIETY, not far from the thousands of brittle brown newspaper clippings and file photos that play mistress to visiting researchers, is a woman's cloak that, but for a bloodstain on the front, seems exceedingly unremarkable. The cloak is believed to have once belonged to Mary Todd Lincoln, and the stain probably came from the head of her husband, Abraham Lincoln.

The cloak—along with a comb, dandruff, bloodstained bedsheets, and other artifacts thought to be from the 1865 Lincoln assassination—form the basis for the Historical Society's new project, "Wet with Blood—The Investigation of Mary Todd Lincoln's Cloak." On its surface, the project's purpose seems simple: test the cloak to determine if the blood is Lincoln's. But along the way, "Wet with Blood" will tackle thorny ethical questions about the way scientists, historians, and even the general public treat the DNA of historical figures.

The Historical Society was largely just a library before it bought an astonishing array of artifacts and oddities in 1920, as part of the Charles Gunther collection. Gunther, a wealthy Chicago confectioner and politician, acquired numerous items—including an extensive assortment of Lincolniana—for display in his popular Libby Prison Civil War Museum on Wabash Avenue. Like P. T. Barnum, Gunther showed the genuine beside the bogus. In addition to Mary Todd Lincoln's cloak, for example, visitors were free to stare in wonder at the "skin of the serpent from the Garden of Eden." While historians believe the cloak and other society artifacts to be authentic, recent advances in DNA stain and particle testing will allow them to be certain.

Such testing, however, breeds a matrix of ethical issues: Should Lincoln be disinterred to provide a base DNA sample? Should Lincoln's DNA be tested for disease, and if so, should Lincoln's relatives be apprised of the results? Can Lincoln be cloned from his DNA? Should his descendants have a say in this testing? Are the dead in general entitled to privacy?

"You hear about DNA tests done on Thomas Jefferson or George Washington, but it's usually without concern for ethical implications or even damaging the artifacts," says Nancy Buenger, the society's conservator and overseer of the project. "Hopefully, our work will change that."

Indeed, thousands of universities, private companies, and even individual collectors

around the world own the DNA of historical figures. Some, like the urologist who purchased Beethoven's hair in an auction, take it upon themselves to test their samples for evidence of disease.

"This can be problematic," says Lori Andrews, a renowned bioethicist at Chicago-Kent College of Law, who is working on the project. "For example, if you find a gene for a serious disease in a historical figure, the existing relatives might become uninsurable." Speculation that Lincoln suffered from Marfan syndrome—a hereditary disorder manifested by excessive bone elongation—could raise the temptation to test the artifacts for evidence of the syndrome. "That is an open ethical question," Andrews says, "and the kind of issue that the Historical Society is taking very seriously."

Though the project is just beginning, a glimpse into the Historical Society's moral disposition might be gleaned by listening to Buenger. When asked why the society does not, say, dig up Lincoln to obtain conclusive samples against which to test artifacts, she hesitates a moment, sighs, and thinks not of science but of a guy who met a violent fate one night at the theatre. "We have no interest in digging Lincoln up," she says. "The poor



A Currier & Ives lithograph of the assassination (top left); examining the bloodstained cloak

man has had a hard enough life already. I think we ought to let him rest."

The project, which will involve a number of scientists, historians, and ethicists, is expected to cost \$1 million and could extend over a few years. There is talk of a TV documentary (included in the price tag) to chronicle the process. The Historical Society has a Web site (www.chicagohistory.org/wetwithblood) that chronicles the Lincoln assassination and its associated artifacts, Gunther and his singular museum, and the state of DNA testing.

—ROBERT KURSON

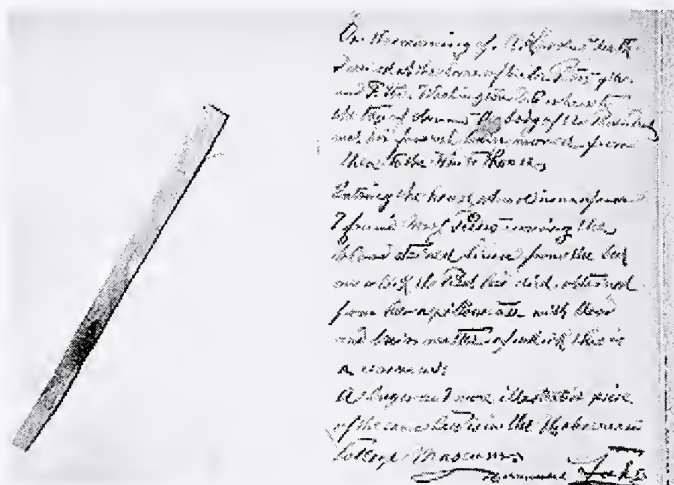


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Pittsburgh Post-Gazette

Artifact holds key to health of Lincoln

Monday, April 13, 2009

By Edward Colimore, The Philadelphia Inquirer



Sharon Gekoski-Kimmel/Grand Army of the Republic Civil War Museum

A strip of pillowcase stained with the blood and brain matter of Abraham Lincoln, from his deathbed, 1865. The note next to the strip was written by Hermann Faber, who worked for the surgeon general during the Civil War.

PHILADELPHIA -- One hundred and forty-four years ago tomorrow, Abraham Lincoln was watching a play at Ford's Theatre in Washington, D.C., when John Wilkes Booth slipped into the president's box and shot him.

Lincoln died the next morning, and now his blood and brain matter -- on part of a pillowcase at a Philadelphia museum -- are being sought for DNA testing that may definitively solve a medical mystery.

Was the 16th president dying of cancer at the time of the assassination?

John Sotos, cardiologist, author and consultant for the television series "House," wants to test the artifact to confirm what eyewitness accounts and 130 period images already tell him: Lincoln had a rare genetic cancer syndrome called multiple endocrine neoplasia type 2B, or MEN2B.

But Dr. Sotos' request has stirred an ethical and scientific debate on the board of

directors of the Grand Army of the Republic Museum and Library, an off-the-beaten-path Civil War institution in Philadelphia's Frankford section.

Should the museum grant permission for the testing and enjoy the spotlight when the results are announced?

Or should it reject Dr. Sotos' request, avoid damaging the artifact and honor the wishes of Robert Todd Lincoln to leave his father in peace?

The answers will come at a museum board meeting, likely to be held May 5, during a time of heightened interest in Lincoln. This year is the bicentennial of his birth.

"This is the Shroud of Turin of Civil War history," said Andy Waskie, a board member, Philadelphia historian and assistant professor of language and history at Temple University. "We are guardians in trusteeship of this extraordinarily important artifact.

"On the basis of pure science, the testing is of interest. We have not eliminated it as an option ... but we want more information."

The board turned to biologist and Civil War buff Gary Grove for advice.

The question in the DNA debate "is not whether we can do the testing but whether we should do it," said Dr. Grove, vice president of research and development at cyberDERM, a Delaware County firm that tests skin-care products.

In his book, "The Physical Lincoln," Dr. Sotos, of Palo Alto, Calif., notes that "he is history's tallest president, at 6 feet, 33/4 inches. He was strong, and a good wrestler. He grew a beard to disguise his ugliness."

The book shows how a diagnostician analyzes feet, hands, lips, neck, heart and other parts of the body to conclude that Lincoln had MEN2B.

Lincoln "suffered from a very rare genetic disorder that affected him, literally, from toe to skull," Dr. Sotos wrote. "The physical Lincoln was just as rare as the mental Lincoln."

Dr. Sotos, a rare-disease hobbyist, said he was unavailable for interviews and was opposed to publicity about the testing. "The museum has not agreed to anything, and no testing is scheduled," he wrote in an e-mail, adding later that "DNA testing is a proven method of answering historical questions."

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"In the case of Abraham Lincoln, it has the potential to do more, by expanding clinical knowledge of a rare and most serious medical condition."

Dr. Sotos and other researchers have long examined images and life masks showing the president's traits, including his arm-span-to-height ratio, thin build, abnormally shaped chest, skin color, hair texture and gray eyes. They also have studied accounts of Lincoln's unsteady gait and other body movements.

In the 1960s, Dr. Grove said, some speculated that the president had Marfan syndrome, a genetic disorder of the connective tissue. People with Marfan are usually tall, with long limbs and long, thin fingers.

"This 'diagnosis' was, in part, based on a 7-year-old Marfan patient that was an eighth-generation descendant of Mordecai Lincoln, the great-great-grandfather of the president," Dr. Grove added.

In the 1990s, attention turned to DNA testing as a way of confirming Marfan syndrome. But the National Museum of Health and Medicine in Washington turned down a request for testing on its own bloodstained artifacts, saying DNA science was not sufficiently advanced, Dr. Grove said.

Other researchers studied 11 generations descended from the grandparents of Lincoln and found that a third of the descendants had some form of a genetic defect called spinocerebellar ataxia, Dr. Grove said.

The president's genetic makeup has also been of interest to the Enloe family, which believes Lincoln was the illegitimate son of Abraham Enloe, of North Carolina -- and not of Thomas Lincoln. The family has not been asked to provide DNA.

"Genetic analysis of Lincoln's DNA is the best and maybe the only way to provide indisputable proof to settle these arguments," said Dr. Grove, who will advise the divided museum board. "Three or four threads would probably be sufficient."

The bloodstained pillowcase fragment is framed under glass and on display at the Grand Army of the Republic Museum and Library. It was donated by a man on the staff of the U.S. surgeon general who treated the president after he was shot.

Eric Schminke, president of the board of directors, said he was not in favor of the testing, adding that "we have to look at the moral and ethical issues."

Lincoln, he said, "is no longer alive and can't defend himself. It would not harm me

if we did not test it."

The last known wishes of the Lincoln family -- to leave the president alone -- came in 1876 after a group of Chicago counterfeiters tried to steal his remains from his memorial in Springfield, Ill., and seek a ransom for \$200,000 along with the release of an imprisoned cohort. They were unsuccessful; Lincoln's coffin was later encased in steel and concrete to prevent further theft attempts.

That left artifacts from the assassination as the only source of DNA.

Mr. Schminke said he would vote on the issue only if the eight other board members split, 4-4.

First published on April 13, 2009 at 12:00 am

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